1998

A Study to Determine the Effect of Technology Education on the Career Choices of Middle School Students

Charles N. Schirra
Old Dominion University

A STUDY TO DETERMINE THE EFFECT OF TECHNOLOGY EDUCATION ON THE CAREER CHOICES OF MIDDLE SCHOOL STUDENTS

A RESEARCH PAPER PRESENTED TO THE GRADUATE FACULTY OF THE DEPARTMENT OF OCCUPATIONAL AND TECHNICAL STUDIES
AT
OLD DOMINION UNIVERSITY

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE
MASTER OF SCIENCE IN EDUCATION DEGREE

BY

CHARLES N. SCHIRRA

AUGUST 1998

APPROVAL PAGE

This research paper was prepared by Charles N. Schirra under the direction of Dr. John M. Ritz in OTED 636, Problems in Education. It was submitted to the Graduate Program Director as partial fulfillment of the requirements for the Degree of Master of Science in Education.

APPROVAL BY: John M. Ritz DATE 3-11-98

Dr. John M. Ritz
Advisor and Graduate Program Director

ACKNOWLEDGEMENTS

I would like to thank my wife for putting up for the long nights that I spent away from her and the family working on this paper. I would like to thank my children for putting up with Daddy not being able to participate in all the outings that they wanted him to. I would also like to thank the rest of my relatives and friends for their understanding in giving me the time to finish this thesis.

I would like to especially thank my father in law, Mr. Chester W. Schirmer, for his review and critique of this manuscript. His guidance and suggestions helped make this thesis fluid in its presentation.

Finally I would like to thank Dr. John Ritz for the numerous hours he spent in both reviewing this manuscript and keeping me focused on the goals of this project. Without his help I would not have been able to complete this course.

Charles N. Schirra

TABLE OF CONTENTS

TABLE OF CONTENTS

TABLE OF CONTENTS

TABLE OF TABLES

Page

CHAPTER I

INTRODUCTION

Technology education is offered as an elective course in most middle schools, junior high schools and high schools. Technology education was first called industrial arts, before becoming the current name - technology education. These courses taught the student some manual arts skills, whether it was wood working, drawing, metal working, or graphic arts. All the courses were designed to prepare the student for a manual arts position in industry and were normally taken by students who were not wanting to pursue a college education. This researcher frequently took these same courses because of the fascination that technology education or industrial arts held for him.

When this researcher was a young child the subject of industrial arts became a fascination as a result of an English 101 assignment to write a term paper on what students wanted to do after graduation from High School. Since teaching ran in the researcher's family, this researcher was drawn to a career as a teacher and discovered that industrial arts teachers did what this researcher enjoyed. This researcher enrolled in industrial arts classes and cemented the decision to become an industrial arts teacher.

Since industrial arts influenced this researcher to the extent that it became a career, it is interesting to find out if industrial arts, or now technology education, influences children attending middle school in choosing their career or whether is it just an elective to fill a gap in the students course load.

Statement of Problem

The purpose of this study was to determine whether or not eighth grade students at Bayside Middle School are influenced in their choice of careers as a result of completing a technology education class.

Research Goals

The goals of this research paper are to:

1. Determine if students take technology education courses as an elective or whether they are genuinely interested in technology education.
2. Determine if technology education classes influence the students in their choice of careers.
3. Determine the ratio of females to males taking the technology education classes irrespective of their future educational plans.
4. Determine the percentage of technology education students who plan on attending college.

Background and Significance

The ultimate goal of public schools is to prepare our children to live a productive life in the world in which they live. Some students choose to go to college and some choose to go out into industry. What influences these children to make these decisions? When this researcher was attending school what was learned in industrial arts cemented the decision to become an industrial arts teacher.

Industrial arts courses provided an understandings about the technical, consumer, occupational, recreational, managerial, social, historical, and cultural aspects of industry and technology. Industrial arts education developed individuals in terms of general education objectives, required abstract reasoning in practical situations resulting in greater understanding of the content area, and contributed toward the understanding of and preparation for participation in the world of work. These programs are designed to provide opportunities for practical experience, exposure to a variety of jobs and careers, personal development, and career guidance. (ERIC Doc ED 113536, 1974) Industrial arts later developed into today's curriculum of technology education.

Technology education moved away from the emphasis on development of knowledge and skills of the processes used by industry, i.e., drafting, wood working, metal working, etc., to the study and application of systems of technology. These systems include communication, construction, manufacturing and transportation. The study includes system design, application and outcomes. Technology education also studies the effect that technology has on individuals, societies and the environments. (Ritz, No Date)

This research paper will only deal with technology education in the middle schools. The Commonwealth of Virginia, Department of Education (1988) describes technology education programs in the middle schools as:

> Designed to provide the early adolescent with active learning situations and higher-order thinking skill development. The curriculum is formulated from experiences with the resources of technology and the processes of problem solving and creating. Program content is drawn from a comprehensive study of all aspects of technology and is presented to extend student understanding of the development,

impact, and potential of technology and careers in technology.

This paper will attempt to determine if technology education does influence the middle school student in their choice of careers. It is important that we know if technology education courses are influencing the student in their choice of careers, since it is the public school's, and for that matter any school's, responsibility to prepare the student to live in the world in which they live. Many students do not plan on attending college due to either not having the intelligence or the financial support.

This study has shown what impact technology education has on the middle school student. The study has also shown the weaknesses and strengths of the middle school technology education program and indicates if areas of the technology education program need modified in order the assist the student in their choice of careers. This is important because technology education is a course that should provide the student with some guidance as to what career they would like to pursue after graduating from high school. It is these students that educators need to target to ensure the curriculum we are providing for the students will assist them in formulating career goals.

Limitations

The limitations of this study were as follows:

1. The study was only conducted on eighth grade middle school students at Bayside Middle School in Virginia Beach taking technology education.
2. The study was conducted during the current school year, 1996-1997.
3. The study was conducted in a Commonwealth of Virginia public middle school.
4. Misinterpretation of survey queries by the participants could result in

inconclusive or irregular data.

5. There is a lack of published information on how technology education affects the career goals of students in middle schools.

Assumptions

The following assumptions were made concerning this study of middle school technology education students:

1. It was assumed that the data provided by the students was correct and was representative of their true feelings.
2. All the students completing the survey were eighth grade students in technology education.
3. Sex, ethnic background, or handicaps would not be a limiting factor in who completes the survey.
4. The students voluntarily provided the information.
5. Economic backgrounds of students may affect the responses.
6. Differing responses could be expected from those expecting to attend college as opposed to those not planning to attend college.
7. Since there was a significant lack of data on middle school technology education students and their career choices, all studies relative to career choices of students in all levels of education would be considered in drawing conclusions in this study.

Procedures

The subjects of this study were the eighth grade students in technology education classes at Bayside Middle School. The instrument used for the study was a survey developed by the researcher, in the form of closed and open ended questions. The responses obtained from the questions were compiled and tabularized to determine whether the goals of this study were addressed. The finding of the study were then analyzed and conclusions and recommendations were reported.

Definition of Terms

The following terms were used throughout this study:

1. Elective courses - Courses that are not considered part of the core courses or courses that are needed for the student to complete in order to graduate from school.
2. Technology Education - Study and application of modern systems of communication, construction, manufacturing and transportation. Emphasis is on system resources, applications and outputs. (Ritz, No Date)
3. Industrial Arts - Development of knowledge and skills of the processes used by industry, i.e., drafting, wood working, metal working, etc. (Ritz, No Date)
4. Filler - Synonymous with elective course.
5. Published information - Information that comes from books or articles in journals or magazines that are published.
6. Unpublished information - Information that comes from unpublished sources such as course outlines, papers, and government services such as ERIC.

Overview of Chapters

In Chapter I of this research paper, the mission of technology education was discussed. It was shown that there is a difference between industrial arts and technology education, but in the application of technology education in the school system, there is very little if any difference. Many school systems have just renamed their industrial arts program to technology education and have not changed the curriculum. The research problem of determining whether or not eighth grade students at Bayside Middle School are influenced in their choice of careers as a result of completing a technology education class during the 1996-1997 school year was discussed. Goals were established and a background of the problem was discussed along with the reason for studying this problem. As in all studies there has to be limitations and assumptions made in order to make the study possible before the actual study can be accomplished.

Chapter II will examine literature that is related to this study in order to discover important variables, distinguish between what has been done and what needs to be done, synthesize and gain perspective, determine and support meaning and relationships, establish the context of the problem and establish the significance of the problem. Chapter III will discuss the methods and procedures used to conduct the study. Sampling techniques used and the procedures for determining the validity and reliability of the study will be explored.

In Chapter IV the finding of this study will be discussed and analyzed. The findings will be analyzed through the use of tables, charts and graphs to determine if the data gathered has any relevance to the study. Finally in Chapter V, all the data gathered will be summarized and conclusions and recommendations will be proposed from the findings. The study will be

analyzed to see if all the goals established at the start of the study were met and what could have been done to help improve the results of the study.

CHAPTER II

REVIEW OF LITERATURE

This chapter is a review of all the literature that was available to this researcher on the topic of this study. A number of important variables that affect the career decision making of children were discovered and will be addressed under the following subheadings: Gender Influences on Career Choice, Experiences as an Influence on Career Decision Making, Family Influences on Career Choices, Barriers that Influence Career Choices, Childhood Influences on Career Choice, and Summary.

Gender Influences on Career Choice

Rojewski (1995) conducted a study on rural adolescents to determine their occupational aspirations as compared to non-rural adolescents. The participants in the study were high school students from a small rural town located on the western slope of Colorado. He found that gender had a fairly consistent influence on the aspirations, expectations, and discrepancies between aspiration-expectations of these rural adolescents. He found that female youth at substantial risk aspired to higher-level careers than male peers at substantial risk. Additionally, females held significantly higher occupational expectations than male counterparts. Rojewski felt that reported occupations are a reflection of standards or anticipated options espoused by the local community (including teachers).

Lightbody and Durndell (1996) undertook a study to determine if gender was linked to disparity in the uptake and experience of education, both within schools and in further and higher education. The author found that despite an overall rise in female undergraduates, the physical science and technology courses have failed to attract increased numbers of female

applicants. They found this difficult to understand since the success rate of girls in senior high school is greater than that of boys, both in terms of exam passes and their continuance of education past the age of sixteen. In their study they found boys preferred science and technology subjects, while girls tended to prefer language, social studies, and humanities. They found there was a substantial body of research which shows people select jobs which are consistent with their sex role self-concept. (Holt, 1989)

Lightbody and Durndell sampled one hundred-six school pupils aged sixteen to eighteen years, fifty-five males and fifty-one females, attending secondary schools. They found that "sex" was not a central characteristic in pupils schematic representation of social or technical roles, or their own career aspirations. It was found that career choice based on gender persisted even though the subject may not have been aware of it. The author felt that if females, and in many instances males, are failing to enroll in physical science and courses involving a high input of new technology, then the course content and the ethos prevailing in these occupations need to be reappraised, rather than blame the lack of participation on sex-stereotyping. In other words, science and technology are perceived to be "masculine" when the real reason is, it is "traditional" for males to pursue these careers. As long as these disciplines do not reflect our changing society then the perception that science and technology are male related careers will continue.

Silverman and Pritchard (1993) conducted a study to determine whether the same factors which tend to discourage girls from pursuing math and science careers were operating in technology education during the girl's early exposure to the subject at an age when gender differences first begin to appear. In their study, the authors identified three results that affected the girl's choices. They were as follows:

Result 1: In middle schools, girls appear to enjoy technology education and have confidence in their abilities, but emerging sexism among peers begins to differentially effect participation on the basis of gender. Girls may also respond more positively to some projects and be more interested in some aspects of their technology education classes which include gender neutral or traditionally female-identified studies.

Result 2: Girls are discouraged from taking more technology education in high school because stereotypes about appropriate careers for women are still operating. Girls do not know enough about technological careers and do not connect what they are learning in the classroom with careers. Girls are uninformed about economic realities and the world of work.

Result 3: The high school survey suggests that while girls who take technology education in high schools are willing to challenge stereotypes about technology as male occupations, they have less confidence in their abilities and are thinking less in terms of well-paid jobs than the boys in their classes.

Experiences as an Influence on Career Decision Making

Phipps (1995) studied eighty, eight to eleven year old students, in a Midwestern, urban school district comprised of a high percentage of minority and low income students. She found that the children were clearly able to state what they wanted to be when they grow up and why. She found the educational levels required for the student preference varied widely by gender. Only one male wanted to be a teacher. Most males were interested in being mechanics, while the females named a wider range of careers including secretary, medical assistant, clothing designer, chef, and beautician. Seven students stated interests in retail or

unskilled jobs, often because a parent worked in this type of employment. Thirty-eight percent indicated that their interests or perceived skills were the primary reasons for their career preferences. Males, more often than females, gave this reasoning. A small number of children expressed an interest in pursuing the same line of work as parents or other close adult role models. These same children reported having spent time observing that person at work or working with them. Phipps suggests what she calls a shadowing experience or allowing students to actually spend time with workers on their jobs, may also be helpful in assisting children to formulate their career aspirations. Shadowing experiences may be particularly useful for children who lack adequate role models in their own family.

Phipps found that there was no significant relationship between the types of careers to which children aspired and their ethnicity or socio-economic status. Phipps found that ability, achievement, and grade levels were not significantly associated with student's career dreams, but they were related to the children's knowledge and perception about how they might attain their career goals.

Phipps concluded by saying she hoped her research served to expand the background information available to teachers, counselors and career development professions; provided "food for thought" for elementary-level counseling and curriculum development; and stimulated further exploration into the career development process in young children.

Family Influences on Career Choices

Silbereisen, Vondracek and Berg (1997) conducted a study of adolescents from the former East and West Germany to determine when they selected their initial vocational choices. They found that higher levels of parental support behavior during childhood were associated with earlier vocational choices in both samples, but the timing and potential disruptiveness of

family relocations corresponded to earlier vocational choices among adolescents in the East only. The adolescents from the East also revealed more grown-up lifestyles and a more advanced level of identity exploration and commitments. The results of the study illustrated the importance of an open individualistically oriented system in the West versus an institutionally controlled, relatively closed system in the East in the timing of vocational development in adolescence.

Barriers that Influence Career Choices

Luzzo (1996) conducted a study to measure the career decision making attitudes (CDM), knowledge and self-efficacy of one hundred eighty-eight undergraduates attending a large, Midwestern community college. The results of the study showed an absence of significant relationship between the number of past career-related barriers and each of the career development measures employed in this study. There were not any relationships between the number of future career-related barriers and the participants CDM attitude and knowledge of CDM principles. There was a significant, negative relationship between CDM self-efficacy and the number of future barriers. This meant that college students who believed they have several occupational barriers to overcome in the future were likely to display less confidence in their ability to make career decisions than students who did not envision as many barriers. The results suggested that students who perceive many occupational barriers in the future might benefit from discussing ways of overcoming these barriers in the process of making career decisions. Career counselors working with high school and college students should determine if any of their students have perceived barriers and show them that they were not unsurmountable.

Childhood Influences on Career Choice

Trice, Hughes, Odom, Woods and McClellan (1995) conducted a study of nine hundred forty-nine students from eleven elementary schools from four states to test the hypotheses from four theories concerning the role of childhood in career development. The four theories that the hypotheses were based on were:

1. Ginsberg (1952), developed the first general theory of occupational choice that included childhood. He divided childhood into two periods. The first period , fantasy choice occurs to about the age of eleven. During this period the children aspire widely and impulsively with the physical constraints being the father's occupation and parental suggestions. The second period, tentative choice occurs from eleven to fourteen years old. The choices are based on children's interests, with little attention to their abilities or other realistic constraints of choice.
2. Roe (1957), said the quality of early family experiences leads to the formation of basic personality, which, in turn determines occupational choice.
3. Havighurst (1964), divided the period of childhood into two tasks. These tasks were the identification with a worker, often a parent from age ten until age fifteen, and acquiring the basic habits of industry, from age ten until age fifteen, during which time, through home and school activities the child learns(or does not learn) to organize time and efforts to accomplish goals and to put work ahead of play in appropriate situations.
4. Gottfredson (1981), postulated that the main role of childhood in the career decision process is the elimination of occupations based on the age-specific themes of size and power, sex roles and social valuation.

Using the four theories listed above the following hypotheses were tested:

1. Children's first and second choices will not be related.
2. Children are more influenced by father's than by mother's occupations.
3. Children from different family structures will aspire to different career patterns.
4. Children, particularly before the age of eleven, will indicate that they know someone who holds their first choice job.
5. Children will eliminate more occupations with age, and their reason for rejection will follow a developmental sequence.
6. The reasons children give for their occupational choices will follow a developmental sequence.

The results of the first hypothesis, children's first and second choices will not be related, suggested that even among five year olds there was a significant degree of consistency in occupational aspirations. The results of the second hypothesis, children were more influenced by father's than by mother's occupations suggested the mother's and not the father's occupation influenced younger children. It was found that when both parents worked the same occupation that it influenced the child as to a career choice.

The results of the third hypothesis, children from different family structures would aspire to different career patterns, was inconclusive. The percentage of both boys and girls choosing personal careers seemed to be a mirror image of those with no career choice. The authors determined the hypothesis needed further investigation.

The results of the fourth hypotheses, children particularly before the age of eleven, would indicate that they know someone who holds their first choice job, suggested that the jobs to which children aspired were held by persons they know intimately, rather than simply jobs with which they were acquainted through daily interactions.

The results of the fifth hypothesis, children would eliminate more occupations with age, and their reason for rejection would follow a developmental sequence, partially confirms to Gottfredson's Hypothesis that children, as they age, reject significantly more jobs, although her theory did not suggest the stronger rejection rate by boys. (Gottfredson, 1981)

The results of the sixth hypothesis, the reasons children gave for their occupational choices would follow a developmental sequence, showed the most obvious development sequence was found in the fourth grade. Both the boys and girls could give reasons for their first occupational choice and the number of references to specific abilities and specific interests increased dramatically.

Summary

This chapter, Review of Literature, covered five influences on the career decision making of students in the elementary schools, middle schools, secondary schools, high schools and colleges. It was found that gender, experiences, family, barriers and childhood all influence the decision making ability of students.

The first part of this chapter examined how gender affected the career choices of the student. The research study showed that even though there was no longer sex discrimination in the job market, the ingrained paradigm that girls were only capable of certain jobs persisted. It was also noteworthy that girls have a higher occupational expectation than their male counterparts. In many cases it was found that girls took technology education courses, but due to peer pressure, dropped out to pursue more traditional courses.

The next part of this chapter examined how experiences affected the career goals of students. It was found that once again males chose traditionally male occupations and females chose female occupations. Phipps discovered that shadowing experiences may be the best way

to introduce students to an occupation, especially those that did not have a role model at home to follow. It was interesting that ethnicity or socio-economic status had no effect on the decision making of the students.

Next family influences on career choices were investigated. The study was done in Europe on East and West German families. The data collected showed that when children were in a tightly controlled society, they matured quicker and made vocational choices early, while open societies allowed the child to mature naturally and slowly.

Barriers that influence career choice or career decision making were investigated. The researcher found no barriers in attitude and knowledge, but did find one in self-efficacy. The barrier was a self imposed barrier but a barrier none the less. The researcher felt that if these barriers could be identified early that the student could overcome them and open up more occupations to choose from.

Finally, childhood influences were examined. It was found that children stick with their choice of occupations when younger, but as they mature they choose other occupations. An unusual finding was that children tend to follow the mother's occupation instead of the father's occupation and when both parents have the same occupation the child picked that career choice. If the child knew the person intimately, then they usually chose that person's occupation to follow. Additionally, it was found that fourth graders were able to give reasons for their first occupational choice and the number of references to specific abilities and interests increased dramatically. Chapter III will examine the methods and procedures used during the study.

CHAPTER III

METHODS AND PROCEDURES

In this chapter the methods and procedures used to gather the data for the study will be discussed. The research method used was descriptive research and will be further discussed in the following sub-sections: Population, Research Variables, Instrument Design, Methods of Data Collection; and Summary.

Population

The population for this study were all the eighth grade technology education students enrolled at Bayside Middle School in Virginia Beach, Virginia. The only students not surveyed were those absent on the day the survey was conducted. If possible, an attempt was made to obtain surveys from any students that were absent at a later date in order to add reliability to this study. There were seventy-two students making up the population.

Research Variables

As a result of the review of literature conducted in Chapter II, the following research variables were identified: gender, experiences, family, barriers and childhood. Researchers found that males traditionally chose male related occupations and females chose female related occupations. They found the experience that a child receives about an occupation will influence their career choice. It was also found that the more open and individualistically oriented a family was, the more likely for a child to make a mature decision on a career. The variable of barrier was found to exist, but in reality it only existed in the mind of the child and not in real life. The final variable encountered was childhood. It was found that a child makes

decisions based on influences of their age, maturity and parents or significant others occupation.

Instrument Design

The instrument design chosen for this research was a survey with both open ended and closed ended questions. A copy of the survey was included in Appendix A and consisted of five closed ended questions and four open ended questions. The survey was designed to gather data to support the goals of this research which were: To determine if students take technology education courses as an elective or whether they are genuinely interested in technology education; Determine if technology education classes influence the students in their choice of careers; Determine the ratio of females to males taking technology education classes, irrespective of their future educational plans; and Determine the percentage of technology education students who plan on attending college.

Method of Data Collection

Data was collected from the surveys distributed to the eighth grade technology education students at Bayside Middle School. The survey and the cover letter in Appendix B were given to their teacher, Mr. Steve Baird, for distribution and collection on 9 June 1997. He returned the completed surveys to the researcher for analysis of the data collected.

Statistical Analysis

The data collected was analyzed by determining the percentage of responses to each answer, the number of responses to each question were also summarized.

Summary

This chapter, Methods and Procedures, examined the methods and procedures used to collect and analyze the data for this study. In the first section, the population surveyed was discussed. The population was composed of all eighth grade technology education students at Bayside Middle School in Virginia Beach. The next area discussed was the research variables of which there were five identified and discussed. These variables were: gender, experiences, family, barriers, and childhood. The design of the instrument, which was a survey, was explained along with how the survey data would be collected. The chapter concluded with the statistical analysis of the data. Since the data was not based on points or a value, it does not lend itself to other statistical analysis. In Chapter IV, the findings of the data collected will be shown both in writings and through the use of tables.

CHAPTER IV

FINDINGS

In this chapter the findings of the survey administered to the eighth grade technology education students at Bayside Middle School in Virginia Beach, Virginia., will be reported. This chapter will be made up of the following sub-sections: Purpose of the Study and Instrument Used, Administration of the Instrument, Explanation of Tables, Documentation of Responses, and Summary.

Purpose of the Study and Instrument Used

The purpose of this study was to determine whether or not eighth grade students at Bayside Middle School are influenced in their choice of careers as a result of completing a technology education class. The instrument used to obtain data was a survey consisting of nine questions. Four questions were open ended questions and five questions were closed ended.

Administration of the Instrument

The survey was administered to seventy-two eighth grade students. The population consisted of forty-five male students and twenty-seven female students from four separate eighth grade technology education classes at Bayside Middle School in Virginia Beach, Virginia. For purposes of this study, the classes were labeled "A", "B", "C" and "D". The completed instrument was returned to the researcher on 12 June 1997.

Explanation of Tables

The data collected was compiled into Tables 1 through 9. The following legend for interpreting the tables is listed below:

A - Class A

B - Class B

C - Class B

D - Class D

TP - Total population that responded

%T - Percent of total respondents

Documentation of Responses

The responses to Question 1, "Please indicate your sex.", are shown in Table 1. The responses started out with Class A being equally divided and then the subsequent classes having more males than females. The majority or sixty-three percent of the respondents were males and thirty-eight were females.

TABLE 1.

QUESTION 1 RESPONSES

	A	B	C	D	TOTAL	%T
1. Please indicate your sex.						
A. Male	11	10	12	12	45	63%
B. Female	11	7	6	3	27	38%
TOTALS	22	17	18	15	72	100%

The responses to Question 2, "The person that most encouraged you to take technology education was:", are shown in Table 2. There was a total of sixty-five respondents to this question. Seven respondents, three males and four females, marked more than one response to this question, invalidating their replies. Even though the majority of respondents indicated that "Other" influenced their decision to take technology education, it should be noted that there were seven responses given under "Other". The seven responses were further broken down into two groups. The first group contained the responses "myself, I want to/I wanted it/I just took it/none/nobody." The second group had only one response in it, "the television". The data shows that the majority of the respondents were not influenced by any other person to take technology education. The survey also showed that the mother and friends had more of an influence on the respondent taking technology education than the father.

TABLE 2

QUESTION 2 RESPONSES

	A	B	C	D	TP	%T
2. The person that most encouraged you to take technology education was:						
A. your mother	4	2	2	2	10	15%
B. your father	3	2	0	3	8	12%
C. your brothers/sisters	0	0	2	0	2	3%
D. your friends	3	3	2	2	10	15%
E. your teachers	0	1	0	1	2	3%
F. your guidance counselor	1	1	0	0	2	3%
G. Other (fill in your reply)	7	7	10	7	31	48%
Myself /I want to/I wanted it/I just took it/ None/No Body	7	6	10	7	30	46%
The television	0	1	0	0	1	2%
TOTALS	18	16	16	15	65	100%

The responses to Question 3, "Why did you take technology education? (Check the primary reason only)", are shown in Table 3. There were only sixty-two respondents to this question. Ten respondents, eight males and two females, marked more than one response to this question, invalidating their replies. The majority was split twenty-seven percent and twenty-six percent respectively between those that said they took technology education because they liked technology education classes and those that said they are good in technical activities. It should be noted that even though sixteen percent of the respondents marked "Other", seven of the ten responses or eleven percent were related to technology education classes or technical activities. The exact breakdown shows three percent of the replies should actually have been under response "B" or "I liked my technology education classes" and eight percent of the replies should actually have been under response "C" or "I am good in technical activities". This would bring the responses for "B" and "C" from twenty-seven and twenty-six to thirty percent and thirty-four percent respectfully.

The responses to Question 4, "Are you taking a technology education class because", are shown in Table 4. There were only sixty-nine respondents to this question. Three respondents, one male and two females did not respond to this question. As shown by Table 4, the majority or fifty-nine percent of the respondents took technology education because they were genuinely interest in it.

The responses to Question 5, "Do you plan on attending college?", are shown in Table 5. All seventy-two respondents answered this question. As shown by Table 5, the majority or seventy-nine percent of the respondents indicated they plan on attending college. It should be noted that only one respondent out of the population said they did not plan on attending college.

TABLE 3

QUESTION 3 RESPONSES

	A	B	C	D	TP	%T
3. Why did you take technology education? (Check the primary reason only)						
A. I wanted a career in a technology-related field	1	0	1	0	2	3%
B. I liked my technology education classes	7	5	2	3	17	27%
C. I am good in technical activities	2	4	5	5	16	26%
D. I wanted a job that pays well	2	0	1	3	6	10%
E. It fit into my schedule	0	2	2	0	4	6%
F. My friends are taking it	3	1	1	1	6	10%
G. My guidance counselor said I should take it	0	1	0	0	1	2%
H. Other (fill in your reply)	4	1	3	2	10	16%
I wanted a stool/ I like working with wood/ I like building things/ Because I liked to build things out of wood and I never took it before so I thought I would give it a try.	2	1	1	1	5	8%
There wasn't anything left/ I just took it/ Cause I wanted to	2	0	1	0	3	5%
I liked the projects/ I liked it last year	0	0	1	1	2	3%
TOTALS	19	14	15	14	62	100%

TABLE 4.

QUESTION 4 RESPONSES

	A	B	C	D	TP	%T
4. Are you taking a technology education class because						
A. You are genuinely interested in studying technology	11	10	10	10	41	59%
B. To fill an elective requirement	10	5	8	5	28	41%
TOTALS	21	15	18	15	69	100%

TABLE 5.

QUESTION 5 RESPONSES

	A	B	C	D	TP	%T
5. Do you plan on attending college?						
A. Yes	17	16	12	12	57	79%
B. No	1	0	0	0	1	1%
C. Undecided	4	1	6	3	14	19%
TOTALS	22	17	18	15	72	100%

The responses to Question 6, "If you have a mother and a father, do both of your parents work?", are shown in Table 6. All seventy-two respondents answered this question. Approximately half of the population indicated they had one parent and half indicated they had two parents. The responses showed that approximately eighty-four percent of the respondents parents or parent worked.

TABLE 6.

QUESTION 6 RESPONSES

	A	B	C	D	TP	%T
6. If you have a mother and a father, do both of your parents work?						
A. Yes	7	6	4	7	24	33%
B. No	4	1	3	1	9	13%
C. I only have one parent	11	10	11	7	39	54%
Does this one parent work?						
a. Yes	9	10	11	7	37	51%
b. No	2	0	0	0	2	3%
TOTALS	22	17	18	15	72	100%

The responses to Question7, "Does your parent or parents work in a technology related job?", are shown in Table 7. The only respondents to this question were supposed to be the respondents that answered "Yes" to Question 6. There were only sixty-two "Yes" responses but seventy-one respondents answered this question. This researcher went through the data and eliminated the responses to this question that were made by the nine respondents that answered "No" to Question 6. The majority or sixty-three percent of the parent or parents do not work in a technology related occupation.

TABLE 7

QUESTION 7 RESPONSES

	A	B	C	D	TP	%T
7. Does your parent or parents work in a technology related job						
A. Yes	5	5	7	6	23	37%
B. No	12	11	8	8	39	63%
TOTALS	17	16	15	14	62	100%

The responses to Question 8, "What was your career choice before taking technology education", and the responses to Question 9, "What is your choice after taking technology education", are shown in Table 8. There were only sixty-two respondents to the questions. Seven males and three females did not write any response in the blanks. The responses to these questions will be further analyzed in Table 9.

TABLE 8

RESPONSES TO QUESTIONS 8 AND 9

8. What is your career choice before completing a technology education class?

9. What is your career choice after completing a technology education class?

REPLY	REPLY
I did not know	A carpenter
I don't know	I don't have one. I want to be like my parent and not have a job.
Marine pilot	Marine pilot
Undecided	Undecided
Nothing	Nothing
My career choice is physical therapist	Physical therapist
Playing a professional sport	Making electronics games
Computer programmer	Computer programmer
(Blank)	(Blank)
(Blank)	(Blank)
Builder	Builder
Don't know	Don't Know
It was teen living	I'm taking the study of Spanish
(Blank)	(Blank)
Cop	Navy
Art	Tech
Pro soccer player, veterinarian, constructor	Pro soccer player, veterinarian, constructor
(Blank)	(Blank)
Medicine	Medicine
Don't know	Don't know
? (Don't know)	Be a technician
Don't Know	Don't Know
Football or basketball player	Football or basketball player
Doctor, electrician	Same
Taking teen living	going back to art
Computers	Going back to computers
Taking a job in auto mechanics	I just want to be a genius
Undecided	Carpenter
Working in computers	Working with computers and technology
Going to college	Going to college
(Blank)	(Blank)
Flying attack planes (Air Force)	Air Force

Table 8. (Continued)

REPLY	REPLY
(Blank)	(Blank)
Police Officer	Police Officer
(Blank)	(Blank)
I don't know	College and play basketball
Navy Pilot	Navy Pilot
Army or sports	Technology related job or sports
To learn how to make things and learn things	Undecided
Baseball star and over the summer carpenter	Carpenter
Dentist	None
To be an artist	To work with animals
Don't know	Don't know
Basketball or Roller Hockey Player	Basketball or Roller Hockey Player
Architect	Builder
I have no idea	My career choice is to do hair
I want to be a pediatrician when I get out of medical school	Pediatrician I don't care for technology to much
I don't know	Computer Programmer
Doing computers	Blank
Architect	Architect and Designer Ware
I do not know	I do not know
Lawyer	Lawyer
Undecided	Lawyer
Teen-living	Computer exploratory
(Blank)	(Blank)
(Blank)	(Blank)
Physical therapist	(Blank)
cosmetology	Same or OB/GYN
cosmetology	cosmetology
(Blank)	(Blank)
?	?
Working as a maintenance mechanic or with kids	Working as a maintenance mechanic or with kids
Being a hair dresser or pediatrician	Doing hair
Art class	Being a teacher
Electrical Engineer	Electrical Engineer
Camera Animation (Director)	Camera Animation
A masseuse	A masseuse
A singer	A track runner
To be a nurse or doctor	Still a nurse or doctor

Table 8. (Continued)

REPLY	REPLY
Physical therapist	Physical therapist
Nothing	Taking it again
Lawyer	Lawyer

In order to analyze the responses given for Questions 8 and 9, it was necessary to divide the responses into three categories. These categories are: the respondent answered "I don't know", "I do not know", "Undecided", "Don't know" for both Question 8 and 9; Choice of career changed between Question 8 and 9, and choice of career remained the same between Question 8 and 9. As shown by Table 9, the majority, forty-seven percent or twenty-nine respondents changed career choices between Question 8 and 9. It is interesting to note that even after completing a technology education course that thirteen percent or eight respondents had not selected a career choice and the remaining respondents career choice remained the same.

TABLE 9

ANALYSIS OF TABLE 8

	A	B	C	D	TP	%T
Comparison of Questions 8 and 9						
Answered "I don't know", "I do not know", "Undecided", "Don't know" I don't know" answer for both Questions 8 & 9	3	3	1	1	8	13%
Career choice changed between Question 8 and 9	8	7	6	8	29	47%
Career choice stayed the same between Question 8 and 9	7	4	9	5	25	40%
TOTALS	18	14	16	14	62	100%

Summary

In this chapter, Findings, the responses given on the instrument used for this study were examined. The purpose of this study was to determine whether or not eighth grade students at Bayside Middle School are influenced in their choice of careers as a result of completing a technology education class. In order to accomplish this study an instrument was developed. The instrument used was a survey made up of nine questions that was administered to seventy-two eighth grade students made up of forty-five male students and twenty-eight female students. The results of the survey were examined in this chapter through the use of text and tables. In order to interpret the tables a legend was furnished. Each question's responses where displayed in a table. The tables were sub-divided by Classes A, B, C, D, total population that answered and percentage of population that answered. A short paragraph preceded each table to explain and highlight the findings of each table. The paragraph was also used to supplement the tables and explain why the total population of 72 was or was not represented.

In Chapter V, Summary, Conclusions and Recommendations, the results of the study first be summarized and conclusions and recommendations will be made on the findings of this study.

CHAPTER V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

This chapter will first summarize all the information contained in the previous four chapters and conclusions and recommendations will be made on the findings of this study. This chapter will be made up of the following headings: Summary, Conclusions and Recommendations.

Summary

The purpose of this study was to determine whether or not eighth grade students at Bayside Middle School are influenced in their choice of careers as a result of completing a technology education class. The research goals of this research paper were then determined. These included:

1. Determine if students take technology education courses as an elective or whether they are genuinely interested in technology education.
2. Determine if technology education classes influence the students in their choice of careers.
3. Determine the ratio of females to males taking the technology education classes irrespective of their future educational plans.
4. Determine the percentage of technology education students who plan on attending college.

This paper attempted to determine if technology education does influence the middle school student in their choice of careers. It is important that we know if technology education courses are influencing the student in their choice of careers, since it is the public school's, and for that matter any school's, responsibility to prepare the student to live in the world in which they live. The study has also shown the weaknesses and strengths of the middle school technology education program and indicates if areas of the technology education program need modified in order the assist the student in their choice of careers. This is important because technology education is a course that should provide the student with some guidance as to what career they would like to pursue after graduating from high school. It is these students that educators need to target to ensure the curriculum we are providing for the students will assist them in formulating career goals.

As in all studies there are limitations that can affect the outcome of the findings. The following limitations were established for this study:

1. The study was only conducted on eighth grade middle school students at Bayside Middle School in Virginia Beach taking technology education.
2. The study was conducted during the current school year, 1996-1997.
3. The study was conducted in a Commonwealth of Virginia public middle school.
4. Misinterpretation of survey queries by the participants could result in inconclusive or irregular data.
5. There is a lack of published information on how technology education affects the career goals of students in middle schools.

The instrument used to collect the data used in this study was a survey which was given to seventy-two eighth grade students, forty-five male students and twenty-seven female students from four separate eighth grade technology education classes. The instrument consisted of nine questions, four open ended questions and five closed ended questions. The completed instrument was returned to the researcher on 12 June 1997.

The data collected from the instrument was compiled into nine tables. The data was divided into three categories. These categories were class, total population for each response, and the percentage of population responding. Totals for each category were then listed at the end of each table.

Conclusions

The findings from the survey were analyzed and compared to the goals initially established in Chapter I of this study and are listed below:

Goal 1. Determine if students take technology education courses as an elective or whether they are genuinely interested in technology education.

In order to determine if students take technology education courses as an elective or whether they are genuinely interested in technology education, we need to look at the responses for Question 2, 3, and 4. Question 2 asked the respondent who was the person that most encouraged them to take technology education. The majority or forty-six percent of the respondents said that no one influenced their decision. The responses showed the respondents are interested in technology education and do not need an outside influence to help them decide.

Question 3 asked the respondent why they took technology education. The majority of the respondents answered choices that showed they were interested in technology education. These four choices were: I wanted a career in a technology related field, two respondents or three percent; I liked my technology education class, seventeen respondents or twenty-seven percent; I am good in technical activities, sixteen respondents or twenty-six percent; under "other", I wanted a stool/I like working with wood/I like building things/Because I like to build things out of wood and I never took it before so I thought I would give it a try, five respondents or eight percent. Adding up these four choices results in a total of forty-one respondents or sixty-four percent of the population indicating an interest in technology education.

Question 4 asks the respondents the same question posed in the first goal of this study. The respondents were asked whether they were taking technology education because they were genuinely interested in studying technology or to fill an elective requirement. The majority, forty-one respondents or fifty-nine percent, said they are genuinely interested in studying technology.

The results of Question 2, 3, and 4 indicate that the students in this population are taking technology education because they are genuinely interested in it. It is interesting to note that both Question 3 and 4 had a total of forty-one respondents that indicated they were interested in technology education.

Goal 2. Determine if technology education classes influence the students in their choice of careers.

In order to determine if technology education classes influence the students in their choice of careers, the responses of Questions 6, 7, 8, and 9 need to be examined. Question 6 is a two part question. The first part asked if both parents worked and the second part identified

the respondent as having only one parent and asked if that parent worked. It is interesting to note that over half the respondents or fifty-four percent came from a single parent home and two respondents had parents that were not working. Of the respondents that had a parent or parents working, thirty-nine or sixty-three percent of the respondents said their parent or parents did not work in a technology related job. These facts show that even though the parent or parents do not work in a technology related job, the parents or parent occupation is not influencing their children in their choice of careers relating to technology.

Twenty-eight respondents or thirty-eight percent of the population changed their career choice after taking a technology education class. Even though thirty-nine percent is the greatest response percentage it should be noted that the other two choices were close with twenty-four or thirty-three percent of the population not changing their choice of careers and twenty or twenty-eight percent of the population answered either "I do not know" or did not state a career in their responses. The responses for Question 3, show that sixty-one percent of the respondents were genuinely interested in technology education. If the respondents that changed their career choice and the respondents that did not change their career choices were added, it would total seventy-two percent of the population. This can be interpreted that since the majority of respondents were already interest in technology education, some of them may have already formulated their career plans. Therefore since thirty-nine percent of the respondents career choices were changed after taking a technology education course, it can be said that yes technology education classes do affect the career choices of students taking technology education.

Goal 3. Determine the ratio of females to males taking the technology education classes irrespective of their future educational plans.

In order to determine the ratio of females to males taking technology education class irrespective of their future educational plan, the responses to Question 1 need to be examined. Question 1 asked the respondent to please indicate your sex. Forty-five respondents indicated they were males and twenty-seven respondents indicated they were females. Using simple mathematical analysis, it is found that there are six tenths females to every male attending technology education or thirty-eight percent of the population were females.

Goal 4. Determine the percentage of technology education students who plan on attending college.

In order to determine the percentage of technology education students that plan on attending college the responses for Question 5 need to be examined. Question 5 asked the respondent if they plan on attending college. The majority fifty-seven respondents or seventy-nine percent indicated that they plan on attending college.

Recommendations

Misinterpretation of data could lead to inclusive or irregular data was listed as a limitation to this study. Students in classes A, C, and D had trouble interpreting what was being asked in the survey, especially for questions the respondent was asked for only one reply. Some students put in more than one response which resulted in the question being invalidated. Even though there were a few problems in student interpretation, if invalidated student responses were not counted there still would have been more than a sixty percent return rate on the surveys. According to experts, a least sixty percent return of surveys improves a study's validity.

Question 8 asked the respondent what was their career choice before completing a technology education class? Question 9 asked the respondent what was their career choice after taking technology education? The data furnished for these questions would have been a lot more valuable if all the students had written in a response. It is hard to believe that twenty respondents or twenty-eight percent of the population do not know what career they want to go into when they graduate from high school. If this is true then the teacher needs to first look at whether or not these students are interested in technology education or just taking the course to meet a credit requirement. There were twenty-eight students that said they were taking the technology education course to fill an elective requirement and of these, twenty students said they were not taking technology education because they liked it. It is possible that these twenty student felt the survey did not apply to them and therefore left the questions blank. It may also be possible that for some reason technology education is not reaching these students and maybe the teacher needs to research their course to see if possibly the course needs modified to reach these twenty students.

This researcher recommends that if this survey is used by another researcher, they ensure the students understand what is being asked of each question. If necessary, the researcher should track who turned in what survey, so that if data was missing or incomplete the respondent could be contacted for additional information. This was not possible for this researcher to do, but if the researcher was a teacher, then it would have been possible to contact the students for clarification on their responses to the questions. Conducting these follow up interviews would have been difficult and time consuming, but may have lead to more accurate data.

Currently the way this survey functions, it can not be easily tested for validity. This researcher recommends that the responses received from this survey be used to develop a new

instrument that lends itself easier to validation. An example would be modify Question 3, The reason I took technology education was influenced by: so that part "A" which read "I wanted a career in a technology related field" would have blocks after it. The blocks would read: "Greatly Influenced", "Was a little influence", "Did not influence or discourage", "Discouraged a little bit", and "Discouraged a lot". This way each question would have degrees for answers that could be tracked.

Overall the study met the established goals, but further research needs to be done to see if the results are the same for a large population. This population was from an inner city school. The same study done on an urban or middle class school may have been different. To assist future researchers the raw data used in this study is enclosed in Appendix C. Across the top of the data are labels, 1A, 2A, 3A, etc. This was the method used to track which survey came from which class and to furnish a method, by which this researcher could go back to make sure the data entered was correct. Hopefully this information will benefit future researchers and maybe one day we can definitely say whether or not technology education affects the career choices of middle school students.

BIBLIOGRAPHY

Ginzberg, E. (1952). Toward a theory of occupational choice. Occupations, 30, 491-494.

Gottfredson, L. (1981). Circumscription and compromise: A developmental theory of occupational aspirations. Journal of Counseling Psychology, 28, 545-580.

Havighurst, R.. J. (1964). Youth in exploration and man emergent: In H. Horrow (Ed.), Man in a world of work (pp. 215-236). Boston, MA: Houghton Mifflin.

Holt, P. A. (1989). Different effects of status and interest in the process of compromise. Journal of Counseling Psychology, 36(1), 42-47.

Introduction to Technology, Commonwealth of Virginia Department of Education Vocational and Adult Education, Richmond, VA., 1988.

Lightbody, P. and Durndell, A. (1996).The masculine image of careers in science and Technology, Fact or fantasy? British Journal of Educational Psychology, 66, 231-246.

Luzzo, D. A. (1996). Exploring the relationship between the perception of occupational barriers and career development. Journal of Career Development, 22 (4), Summer, 239-246.

Phipps, B. J. (1995). Career Dreams of Preadolescent Students. Journal of Career Development, 22 (1), Fall , 23-32.

Position Paper on Industrial Arts Education in New Jersey. (1974). (ERIC Document Reproductive Service No. ED 113536)

Ritz, J. M. (No Date on Paper). Technology Education, Where Might Our Changes Lead Us? . Part of Course Syllabus for OTED 596 at Old Dominion University.

Roe, A. (1957). Early determinants of vocational choice, Journal of Counseling Psychology, 4, 212-217.

Rojewski, J. W. (1995). Impact of at-risk behavior on the occupational aspirations and expectations of male and female adolescents in rural settings. Journal of Career Development, 22 (1), Fall, 33-47.

Silbereisen, R. K., Vondracek. F. W. and Berg, L. A. (1997). Differential timing of initial vocational choices. The influence of early childhood family relocation and parental support behavior in two cultures. Journal of Vocational Behavior, 50, 1, February , 41-59.

Silverman, S. and Pritchard, A. M. (1993). Building their future: girls in technology education in Connecticut. VERTEC, SEP . (ERIC Document Reproductive Service No. ED 362656)

Trice, A. D., Hughes, M. A., Odom, C., Woods, K. and McClellan, N. (1995). The origin of children's career aspirations: IV. Testing hypotheses from four theories. The Career Development Quarterly, 43, June, 307-321.

APPENDICES

APPENDIX A

Survey of Eighth Grade Middle School Technology Education Students

Survey of Eighth Grade Middle School Technology Education Students

This survey is being provided to you, the eighth grade middle school technology education student, to gather data on technology education in the middle schools of the Virginia Beach School System. Your replies to each question will be beneficial in determining the outcome of this study. This study will not be made public but may be used to determine the need for further studies.

Answer each question by either putting an "X" or check (✓) in the blank alongside the response you pick, or if you select other, please fill in your response. For questions 7 and 8 fill in your response. Thank you for your assistance in this project.

1. Please indicate your sex.

____ A. Male

____ B. Female

2. The person that most encouraged you to take technology education was:

____ A. your mother

____ B. your father

____ C. your brothers/sisters

____ D. your friends

____ E. your teachers

____ F. your guidance counselor

____ G. Other (fill in your reply)_____

3. Why did you take technology education? (Check the primary reason only)

____ A. I wanted a career in a technology-related field

____ B. I liked my technology education classes

____ C. I am good in technical activities

____ D. I wanted a job that pays well

(continued on next page)

____ E. It fit into my schedule

____ F. My friends are taking it

____ G. My guidance counselor said I should take it

____ H. Other (fill in your reply) _____

4. Are you taking a technology education class because

____ A. You are genuinely interested in studying technology

____ B. To fill an elective requirement

5. Do you plan on attending college?

____ A. Yes

____ B. No

____ C. Undecided

6. If you have a mother and a father, do both of your parents work?

____ A. Yes

____ B. No

C. I only have one parent

Does this one parent work

____ a. Yes

____ b. No

If you answered "Yes" to the above question, please answer question 7 otherwise continue with question number 8.

7. Does your parent or parents work in a technology related job.

____ A. Yes

____ B. No

(continued on next page)

For the next two answers fill in your reply.

8. What was your career choice before taking a technology education class?

---

9. What is your career choice after completing a technology education class?

APPENDIX B

Cover letter to teacher

2537 Townfield Lane
Virginia Beach, VA 23454

Dear Mr. Baird,

I am conducting a research study to determine the effect of technology education on the career choices of eighth grade middle school students. This study is a partial fulfillment of the Masters of Science in Education Degree at Old Dominion University. The data that I am requesting through the attached surveys will not be published and will only be used for fulfilling the requirements of the Methods of Research in Education class I am enrolled in.

I did my practicum at Bayside Middle School last December and your eighth grade students are a diverse enough population that their replies would benefit my research. Attached are surveys that will only take fifteen minutes to fill out. The instructions for the survey are simple. The student just has the answer the questions either by selecting the appropriate reply or writing in the reply where requested. When the surveys are completed if you will give me a call I will come by and collect them.

Thank you for your assistance in the project and if you have questions please feel free to contact me at Home 757-426-7765 or Work 757-433-5411.

Sincerely,

Charles N. Schirra

APPENDIX C

Raw Data from the Survey of Eighth Grade Middle School Technology Education Students

TABLE 10

SURVEY RAW DATA

MALE SURVEY RESPONSE

	1A	2A	3A	4A	5A	6A	7A	8A	9A	10A	11A	TOTAL	1B	2B	3B	4B	5B	6B	7B	8B	9B	10B	TOTAL	1C	2C	3C	4C	5C	6C	7C	8C	9C	10C	11C	12C	TOTAL	1D	2D	3D	4D	5D	6D	7D	8D	9D	10D	11D	12D	TOTAL	TOTALS
1. Please indicate your sex.																																																		
A. Male	1	1	1	1	1	1	1	1	1	1	1	11	1	1	1	1	1	1	1	1	1	1	10	1	1	1	1	1	1	1	1	1	1	1	1	12	1	1	1	1	1	1	1	1	1	1	1	12	45
B. Female																																																		0
2. The person that most encouraged you to take technology education was:																																																		
A. your mother				1			1					2			1								1								1	1		1	1					1									1	5
B. your father			1					1				2										1	1								1	1			0			1			1						1	3	6
C. your brothers/sisters												0											0	1							1				1													0	1
D. your friends					1	1			1			2					1				1		2				1	1				1			2				1									1	7
E. your teachers												0						1					1								1				0							1						1	2
F. your guidance counselor										1		1											0												0													0	1
G. Other (fill in your reply)	1	1				1				1		3	1	1		1		1		1			5		1	1				1	1	1		1	1	6	1	1			1			1	1	1		7	21
Myself/None/No Body/I want to	1	1				1				1		3	1	1		1		1		1			5		1	1				1	1	1		1	1	6	1	1			1			1	1	1		7	21
3. Why did you take technology education? (Check the primary reason only)																																																		
A. I wanted a career in a technology-related field				1								1										1	0								1	1			0													0	1
B. I liked my technology education classes			1		1	1			1			3								1	1		2					1						1						1		1						2	8
C. I am good in technical activities						1		1				1		1	1	1	1				1		3	1		1			1	1	1			4	1		1			1		1						4	12
D. I wanted a job that pays well										1	1	2											0					1			1	1	1	1		1			1					1	1		3	6
E. It fit into my schedule												0	1										1											1	1		1												0	2
F. My friends are taking it							1					1									1		0				1						1		1													1	3
G. My guidance counselor																																																		

TABLE 10

SURVEY RAW DATA (CONTINUED)

MALE SURVEY RESPONSE

	1A	2A	3A	4A	5A	6A	7A	8A	9A	10A	11A	TOTAL	1B	2B	3B	4B	5B	6B	7B	8B	9B	10B	TOTAL	1C	2C	3C	4C	5C	6C	7C	8C	9C	10C	11C	12C	TOTAL	1D	2D	3D	4D	5D	6D	7D	8D	9D	10D	11D	12D	TOTAL	TOTALS
said I should take it												0										1	0													0												0	0
H. Other (fill in your reply)	1	1										2				1		1				1	1		1								1		1											1	1	5
I wanted a stool		1										1											0												0												0	1
I like working with wood	1											1											0												0												0	1
I love it												0				1							0												0												0	0
I like building things												0						1					1												0												1	1	2
Because I wanted to know a lot																																																		
about plastics, the wood												0										1	0												0												0	0
There wasn't anything left												0											0		1										1												0	1
It is fun												0											0											1	0												0	0
4. Are you taking a technology																																																		
education class because																																																		
A. You are genuinely interested in																																																		
studying technology	1		1	1		1	1	1	1	1		8		1		1		1	1	1			5				1	1	1	1	1	1	1			7	1	1	1		1	1	1	1			1	1	9	29
B. To fill an elective requirement		1			1					1	1	3	1				1				1	1	4	1	1	1								1	1	5				1				1	1			3	15
5. Do you plan on attending college?																																																		
A. Yes	1		1			1	1	1	1	1	1	8	1	1	1	1	1	1	1	1	1	1	10			1	1	1	1		1		1	1		7	1		1	1	1	1	1			1	1	9	34
B. No				1								1											0												0												0	1
C. Undecided		1			1							2											0	1	1				1		1				5		1							1	1			3	10
6. If you have a mother and a father,																																																		
do both of your parents work?																																																		
A. Yes						1	1			1	1	4	1		1			1		1			4			1		1	1				1			4	1			1		1	1	1				1	6	18
B. No	1								1			2											0				1				1				2													0	4

TABLE 10

SURVEY RAW DATA (CONTINUED)

MALE SURVEY RESPONSE

	1A	2A	3A	4A	5A	6A	7A	8A	9A	10A	11A	TOTAL	1B	2B	3B	4B	5B	6B	7B	8B	9B	10B	TOTAL	1C	2C	3C	4C	5C	6C	7C	8C	9C	10C	11C	12C	TOTAL	1D	2D	3D	4D	5D	6D	7D	8D	9D	10D	11D	12D	TOTAL	TOTALS
C. I only have one parent		1	1	1	1			1				5		1		1	1		1		1	1	6	1	1					1		1		1	1	6		1	1		1				1	1	1		6	23
Does this one parent work																																																		
a. Yes			1	1	1			1				4		1		1	1		1		1	1	6	1	1					1		1		1	1	6		1	1		1				1	1	1		6	22
b. No		1										1											0													0												0	1
7. Does your parent or parents .																																																		
work in a technology related job																																																		
A. Yes			1	1					1			3	1				1	1		1			4						1	1		1	1	1		5		1	1	1	1						1		5	17
B. No	1	1			1	1	1	1	1		1	8		1	1	1			1		1	1	6	1	1	1	1	1			1				1	7	1				1	1	1	1	1		1	7	28
8/9 Question Comparison																																																		
Put "I don't Know" or Nothing Both Quest				1	1							2	1								1		2	1												1									1			1	6
Left it Blank									1	1		2			1				1				2										1		1	2		1										1	7
Career choice changed	1						1					2		1		1	1					1	4				1		1	1	1					4			1		1	1	1	1	1			1	7	17
Career choice stayed the same		1	1			1		1			1	5						1		1			2		1	1		1				1		1		5	1			1							1		3	15

TABLE 10

SURVEY RAW DATA (CONTINUED)

MALE SURVEY RESPONSE

8. What was your career choice before taking a technology education class?

REPONDENT	REPLY
1A	I did not know
2A	I don't know
3A	Marine pilot
4A	Undecided
5A	Nothing
6A	My career choice is physical therapist
7A	Playing a professional sport
8A	Computer programmer
9A	(Blank)
10A	(Blank)
11A	Builder
1B	Don't know
2B	It was teen living
3B	(Blank)
4B	Cop
5B	Art
6B	Pro soccer player, veterinarian, constructor
7B	(Blank)
8B	Medicine
9B	Don't know
10B	? (Don't know)
1C	Don't Know
2C	Football or basketball player

9. What is your career choice after completing a technology education class?

RESPONDENT	REPLY
1A	A carpenter
2A	I don't have one. I want to be like my parent and not have a job.
3A	Marine pilot
4A	Undecided
5A	Nothing
6A	Physical therapist
7A	Making electronics games
8A	Computer programmer
9A	(Blank)
10A	(Blank)
11A	Builder
1B	Don't Know
2B	I'm taking the study of Spanish
3B	(Blank)
4B	Navy
5B	Tech
6B	Pro soccer player, veterinarian, constructor
7B	(Blank)
8B	Medicine
9B	Don't know
10B	Be a technician
1C	Don't Know
2C	Football or basketball player

TABLE 10

SURVEY RAW DATA (CONTINUED)

MALE SURVEY RESPONSE

8. What was your career choice before taking a technology education class?

REPONDENT	REPLY
3C	Doctor, electrician
4C	Taking teen living
5C	Computers
6C	Taking a job in auto mechanics
7C	Undecided
8C	Working in computers
9C	Going to college
10C	(Blank)
11C	Flying attack planes (Air Force)
12C	(Blank)
1D	Police Officer
2D	(Blank)
3D	I don't know
4D	Navy pilot
5D	Army or sports
6D	To learn how to make things and learn things
7D	Baseball star and over the summer carpenter
8D	Dentist
9D	To be an artist
10D	Don't know
11D	Basketball or Roller Hockey Player
12D	Architect

9. What is your career choice after completing a technology education class?

RESPONDENT	REPLY
3C	Same
4C	going back to art
5C	Going back to computers
6C	I just want to be a genius
7C	Carpenter
8C	working with computers and technology
9C	Going to college
10C	(Blank)
11C	Air Force
12C	(Blank)
1D	Police Officer
2D	(Blank)
3D	College and play baseball
4D	Navy pilot
5D	Technology related job or sports
6D	Undecided
7D	Carpenter
8D	None
9D	To work with animals
10D	Don't know
11D	Basketball or Roller Hockey Player
12D	Builder

TABLE 10

SURVEY RAW DATA (CONTINUED)

FEMALE SURVEY RESPONSES

	12A	13A	14A	15A	16A	17A	18A	19A	20A	21A	22A	TOTAL	11B	12B	13B	14B	15B	16B	17B	TOTAL	13C	14C	15C	16C	17C	18C	TOTAL	13D	14D	15D	TOTAL	TOTALS
1. Please indicate your sex.																																
A. Male																																0
B. Female	1	1	1	1	1	1	1	1	1	1	1	11	1	1	1	1	1	1	1	7	1	1	1	1	1	1	6	1	1	1	3	27
2. The person that most encouraged you to take technology education was:																																
A. your mother		1					1					2				1				1		1					1		1		1	5
B. your father	1										1	1						1		1							0				0	2
C. your brothers/sisters					1					1		0					1			0						1	1				0	1
D. your friends			1		1					1	1	1		1			1			1							0			1	1	3
E. your teachers												0								0							0				0	0
F. your guidance counselor												0	1							1							0				0	1
G. Other (fill in your reply)				1	1	1		1	1			4			1		1		1	2	1		1	1	1		4	1			1	11
Myself/No Body/I want it/I just took it				1	1	1		1	1			4					1		1	1	1		1	1	1		4	1			1	10
The television												0			1					1							0				0	1
3. Why did you take technology education? (Check the primary reason only)																																
A. I wanted a career in a technology-related field					1							0								0		1					1				0	1
B. I liked my technology education classes	1			1			1		1		1	4				1	1		1	3	1						1	1			1	9

TABLE 10

SURVEY RAW DATA (CONTINUED)

FEMALE SURVEY RESPONSES

	12A	13A	14A	15A	16A	17A	18A	19A	20A	21A	22A	TOTAL	11B	12B	13B	14B	15B	16B	17B	TOTAL	13C	14C	15C	16C	17C	18C	TOTAL	13D	14D	15D	TOTAL	TOTALS
C. I am good in technical activities			1								1	1						1		1			1				1		1		1	4
D. I wanted a job that pays well					1							0								0							0				0	0
E. It fit into my schedule												0		1						1					1		1				0	2
F. My friends are taking it		1								1	1	2			1					1							0				0	3
G. My guidance counselor																																
said I should take it												0	1							1							0				0	1
H. Other (fill in your reply)						1		1				2								0				1		1	2			1	1	5
I just took it						1						1								0							0				0	1
Cause I wanted to								1				1								0							0				0	1
Because I liked to build things out of wood																																
and I never took it before so I thought I																																
give it a try.												0								0				1			1				0	1
I liked the projects												0								0							0			1	1	1
I liked it last year												0								0						1	1				0	1
4. Are you taking a technology																																
education class because																																
A. You are genuinely interested in																																
studying technology			1	1			1					3		1	1	1	1	1		5	1	1				1	3		1		1	12
B. To fill an elective requirement		1			1	1		1	1	1	1	7							1	1			1	1	1		3	1		1	2	13
5. Do you plan on attending college?																																

TABLE 10

SURVEY RAW DATA (CONTINUED)

FEMALE SURVEY RESPONSES

	12A	13A	14A	15A	16A	17A	18A	19A	20A	21A	22A	TOTAL	11B	12B	13B	14B	15B	16B	17B	TOTAL	13C	14C	15C	16C	17C	18C	TOTAL	13D	14D	15D	TOTAL	TOTALS
A. Yes	1	1		1	1		1	1	1	1	1	9	1	1	1	1		1	1	6	1	1		1	1	1	5	1	1	1	3	23
B. No												0								0							0				0	0
C. Undecided			1			1						2					1			1			1				1				0	4
6. If you have a mother and a father, do both of your parents work?																																
A. Yes			1				1		1			3			1	1				2							0			1	1	6
B. No				1							1	2						1		1			1				1	1			1	5
C. I only have one parent	1	1			1	1		1		1		6	1	1			1		1	4	1	1		1	1	1	5		1		1	16
Does this one parent work																																
a. Yes		1			1	1		1		1		5	1	1			1		1	4	1	1		1	1	1	5		1		1	15
b. No	1											1								0							0				0	1
7. Does your parent or parents . work in a technology related job																																
A. Yes							1	1			1	3					1			1					1	1	2			1	1	7
B. No	1	1	1	1	1	1			1	1		8	1	1	1	1			1	5	1	1	1	1			4	1	1		2	19
8/9 Question Comparison																																
Put "I don't Know" or Nothing both questions						1						1					1			1							0				0	2
Left it Blank										1	1	2				1				1							0				0	

TABLE 10

SURVEY RAW DATA (CONTINUED)

FEMALE SURVEY RESPONSES

	12A	13A	14A	15A	16A	17A	18A	19A	20A	21A	22A	TOTAL	11B	12B	13B	14B	15B	16B	17B	TOTAL	13C	14C	15C	16C	17C	18C	TOTAL	13D	14D	15D	TOTAL	TOTALS
Career choice changed	1		1	1	1			1	1			6	1	1					1	3	1				1		2		1		1	12
Career choice stayed the same		1					1					2			1			1		2		1	1	1		1	4	1		1	2	10

TABLE 10

SURVEY RAW DATA (CONTINUED)

FEMALE SURVEY RESPONSE

8. What was your career choice before taking a technology education class?

REPONDENT	REPLY
12A	I have no idea
13A	I want to be a pediatrician when I get out of medical school
14A	I don't know
15A	Doing computers
16A	Architect
17A	I do not know
18A	Lawyer
19A	Undecided
20A	Teen-living
21A	(Blank)
22A	(Blank)
11B	Physical therapist
12B	cosmetology
13B	cosmetology
14B	(Blank)
15B	?
16B	Working as a maintenance mechanic or with kids
17B	Being a hair dresser or pediatrician
13C	Art class
14C	Electrical Engineer
15C	Camera Animation (Director)
16C	A masseuse
17C	A singer
18C	To be a nurse or doctor
13D	Physical therapist

9. What is your career choice after completing a technology education class?

RESPONDENT	REPLY
12A	My career choice is to do hair
13A	Pediatrician I don't care for technology too much
14A	Computer Programmer
15A	(Blank)
16A	Architect and Designer Ware
17A	I do not know
18A	Lawyer
19A	Lawyer
20A	Computers exploratory
21A	(Blank)
22A	(Blank)
11B	(Blank)
12B	Same or OB/GYN
13B	cosmetology
14B	(Blank)
15B	?
16B	Working as a maintenance mechanic or with kids.
17B	Doing hair
13C	Being a teacher
14C	Electrical Engineer
15C	Camera Animation
16C	A masseuse
17C	A track runner
18C	Still a nurse or doctor
13D	Physical therapist

TABLE 10

SURVEY RAW DATA (CONTINUED)

FEMALE SURVEY RESPONSE

REPONDENT	REPLY
14D	Nothing
15D	Lawyer

RESPONDENT	REPLY
14D	Taking it again
15D	Lawyer

BIBLIOGRAPHY

Ginzberg, E. (1952). Toward a theory of occupational choice. Occupations, 30, 491-494.

Gottfredson, L. (1981). Circumscription and compromise: A developmental theory of occupational aspirations. Journal of Counseling Psychology, 28, 545-580.

Havighurst, R.. J. (1964). Youth in exploration and man emergent: In H. Horrow (Ed.), Man in a world of work (pp. 215-236). Boston, MA: Houghton Mifflin.

Holt, P. A. (1989). Different effects of status and interest in the process of compromise. Journal of Counseling Psychology, 36(1), 42-47.

Introduction to Technology, Commonwealth of Virginia Department of Education Vocational and Adult Education, Richmond, VA., 1988.

Lightbody, P. and Durndell, A. (1996).The masculine image of careers in science and Technology, Fact or fantasy? British Journal of Educational Psychology, 66, 231-246.

Luzzo, D. A. (1996). Exploring the relationship between the perception of occupational barriers and career development. Journal of Career Development, 22 (4), Summer, 239-246.

Phipps, B. J. (1995). Career Dreams of Preadolescent Students. Journal of Career Development, 22 (1), Fall , 23-32.

Position Paper on Industrial Arts Education in New Jersey. (1974). (ERIC Document Reproductive Service No. ED 113536)

Ritz, J. M. (No Date on Paper). Technology Education, Where Might Our Changes Lead Us? . Part of Course Syllabus for OTED 596 at Old Dominion University.

Roe, A. (1957). Early determinants of vocational choice, Journal of Counseling Psychology, 4, 212-217.

Rojewski, J. W. (1995). Impact of at-risk behavior on the occupational aspirations and expectations of male and female adolescents in rural settings. Journal of Career Development, 22 (1), Fall, 33-47.

Silbereisen, R. K., Vondracek. F. W. and Berg, L. A. (1997). Differential timing of initial vocational choices. The influence of early childhood family relocation and parental support behavior in two cultures. Journal of Vocational Behavior, 50, 1, February , 41-59.

Silverman, S. and Pritchard, A. M. (1993). Building their future: girls in technology education in Connecticut. VERTEC, SEP . (ERIC Document Reproductive Service No. ED 362656)

Trice, A. D., Hughes, M. A., Odom, C., Woods, K. and McClellan, N. (1995). The origin of children's career aspirations: IV. Testing hypotheses from four theories. The Career Development Quarterly, 43, June, 307-321.

APPENDICES

APPENDIX A

Survey of Eighth Grade Middle School Technology Education Students

Survey of Eighth Grade Middle School Technology Education Students

This survey is being provided to you, the eighth grade middle school technology education student, to gather data on technology education in the middle schools of the Virginia Beach School System. Your replies to each question will be beneficial in determining the outcome of this study. This study will not be made public but may be used to determine the need for further studies.

Answer each question by either putting an "X" or check (✓) in the blank alongside the response you pick, or if you select other, please fill in your response. For questions 7 and 8 fill in your response. Thank you for your assistance in this project.

1. Please indicate your sex.

____ A. Male

____ B. Female

2. The person that most encouraged you to take technology education was:

____ A. your mother

____ B. your father

____ C. your brothers/sisters

____ D. your friends

____ E. your teachers

____ F. your guidance counselor

____ G. Other (fill in your reply)_____

3. Why did you take technology education? (Check the primary reason only)

____ A. I wanted a career in a technology-related field

____ B. I liked my technology education classes

____ C. I am good in technical activities

____ D. I wanted a job that pays well

(continued on next page)

____ E. It fit into my schedule

____ F. My friends are taking it

____ G. My guidance counselor said I should take it

____ H. Other (fill in your reply) _____

4. Are you taking a technology education class because

____ A. You are genuinely interested in studying technology

____ B. To fill an elective requirement

5. Do you plan on attending college?

____ A. Yes

____ B. No

____ C. Undecided

6. If you have a mother and a father, do both of your parents work?

____ A. Yes

____ B. No

C. I only have one parent

Does this one parent work

____ a. Yes

____ b. No

If you answered "Yes" to the above question, please answer question 7 otherwise continue with question number 8.

7. Does your parent or parents work in a technology related job.

____ A. Yes

____ B. No

(continued on next page)

For the next two answers fill in your reply.

8. What was your career choice before taking a technology education class?

---

9. What is your career choice after completing a technology education class?

APPENDIX B

Cover letter to teacher

2537 Townfield Lane
Virginia Beach, VA 23454

Dear Mr. Baird,

I am conducting a research study to determine the effect of technology education on the career choices of eighth grade middle school students. This study is a partial fulfillment of the Masters of Science in Education Degree at Old Dominion University. The data that I am requesting through the attached surveys will not be published and will only be used for fulfilling the requirements of the Methods of Research in Education class I am enrolled in.

I did my practicum at Bayside Middle School last December and your eighth grade students are a diverse enough population that their replies would benefit my research. Attached are surveys that will only take fifteen minutes to fill out. The instructions for the survey are simple. The student just has the answer the questions either by selecting the appropriate reply or writing in the reply where requested. When the surveys are completed if you will give me a call I will come by and collect them.

Thank you for your assistance in the project and if you have questions please feel free to contact me at Home 757-426-7765 or Work 757-433-5411.

Sincerely,

Charles N. Schirra

APPENDIX C

Raw Data from the Survey of Eighth Grade Middle School Technology Education Students

TABLE 10

SURVEY RAW DATA

MALE SURVEY RESPONSE

	1A	2A	3A	4A	5A	6A	7A	8A	9A	10A	11A	TOTAL	1B	2B	3B	4B	5B	6B	7B	8B	9B	10B	TOTAL	1C	2C	3C	4C	5C	6C	7C	8C	9C	10C	11C	12C	TOTAL	1D	2D	3D	4D	5D	6D	7D	8D	9D	10D	11D	12D	TOTAL	TOTALS
1. Please indicate your sex.																																																		
A. Male	1	1	1	1	1	1	1	1	1	1	1	11	1	1	1	1	1	1	1	1	1	1	10	1	1	1	1	1	1	1	1	1	1	1	1	12	1	1	1	1	1	1	1	1	1	1	1	12	45
B. Female																																																		0
2. The person that most encouraged you to take technology education was:																																																		
A. your mother				1			1					2			1							1								1	1		1	1								1							1	5
B. your father			1					1				2										1	1							1	1			0			1				1						1	3	6
C. your brothers/sisters												0											0	1							1			1														0	1
D. your friends					1	1			1			2					1				1		2				1	1				1			2				1									1	7
E. your teachers												0							1				1								1			0								1						1	2
F. your guidance counselor										1		1											0											0															0	1
G. Other (fill in your reply)	1	1				1					1	3	1	1		1		1		1			5		1	1			1	1	1		1	1		6	1	1				1			1	1	1		7	21
Myself/None/No Body/I want to	1	1				1					1	3	1	1		1		1		1			5		1	1			1	1	1		1	1		6	1	1				1			1	1	1		7	21
3. Why did you take technology education? (Check the primary reason only)																																																		
A. I wanted a career in a technology-related field				1								1										1	0								1	1			0														0	1
B. I liked my technology education classes			1		1	1			1			3								1	1		2					1						1						1		1						2	8
C. I am good in technical activities						1		1				1		1	1	1	1				1		3	1		1			1	1	1			4	1		1			1		1						4	12
D. I wanted a job that pays well									1	1		2											0					1			1	1	1		1		1		1				1	1			3	6
E. It fit into my schedule												0	1										1											1	1		1												0	2
F. My friends are taking it							1					1									1		0				1					1			1						1								1	3
G. My guidance counselor																																																		

TABLE 10

SURVEY RAW DATA (CONTINUED)

MALE SURVEY RESPONSE

	1A	2A	3A	4A	5A	6A	7A	8A	9A	10A	11A	TOTAL	1B	2B	3B	4B	5B	6B	7B	8B	9B	10B	TOTAL	1C	2C	3C	4C	5C	6C	7C	8C	9C	10C	11C	12C	TOTAL	1D	2D	3D	4D	5D	6D	7D	8D	9D	10D	11D	12D	TOTAL	TOTALS
said I should take it												0										1	0													0												0	0
H. Other (fill in your reply)	1	1										2				1		1				1	1		1								1		1											1	1	5
I wanted a stool		1										1											0												0												0	1
I like working with wood	1											1											0												0												0	1
I love it												0				1							0												0												0	0
I like building things												0						1					1												0												1	1	2
Because I wanted to know a lot																																																		
about plastics, the wood												0										1	0												0												0	0
There wasn't anything left												0											0		1										1												0	1
It is fun												0											0										1		0												0	0
4. Are you taking a technology																																																		
education class because																																																		
A. You are genuinely interested in																																																		
studying technology	1		1	1		1	1	1	1	1		8		1		1		1	1	1			5				1	1	1	1	1	1	1			7	1	1	1		1	1	1	1			1	1	9	29
B. To fill an elective requirement		1			1					1		3	1			1					1	1	4	1	1	1							1	1	5			1					1	1			3	15
5. Do you plan on attending college?																																																		
A. Yes	1		1			1	1	1	1	1	1	8	1	1	1	1	1	1	1	1	1	1	10			1	1	1	1		1		1	1		7	1		1	1	1	1	1			1	1	9	34
B. No				1								1											0												0												0	1
C. Undecided		1			1							2											0	1	1				1		1			1	5		1						1	1			3	10
6. If you have a mother and a father,																																																		
do both of your parents work?																																																		
A. Yes						1	1			1	1	4	1		1			1		1			4			1		1	1				1			4	1			1		1	1	1				1	6	18
B. No	1								1			2											0				1				1				2													0	4

TABLE 10

SURVEY RAW DATA (CONTINUED)

MALE SURVEY RESPONSE

	1A	2A	3A	4A	5A	6A	7A	8A	9A	10A	11A	TOTAL	1B	2B	3B	4B	5B	6B	7B	8B	9B	10B	TOTAL	1C	2C	3C	4C	5C	6C	7C	8C	9C	10C	11C	12C	TOTAL	1D	2D	3D	4D	5D	6D	7D	8D	9D	10D	11D	12D	TOTAL	TOTALS
C. I only have one parent		1	1	1	1			1				5		1		1	1		1		1	1	6	1	1					1		1		1	1	6		1	1		1			1	1	1		6	23
Does this one parent work																																																		
a. Yes			1	1	1			1				4		1		1	1		1		1	1	6	1	1					1		1		1	1	6		1	1		1			1	1	1		6	22
b. No		1										1											0													0												0	1
7. Does your parent or parents .																																																		
work in a technology related job																																																		
A. Yes			1	1					1			3	1				1	1		1			4						1	1		1	1	1		5		1	1	1	1					1		5	17
B. No	1	1			1	1	1	1	1		1	8		1	1	1			1		1	1	6	1	1	1	1	1			1				1	7	1				1	1	1	1	1		1	7	28
8/9 Question Comparison																																																		
Put "I don't Know" or Nothing Both Quest				1	1							2	1								1		2	1												1									1			1	6
Left it Blank									1	1		2			1				1				2										1		1	2		1										1	7
Career choice changed	1						1					2		1		1	1					1	4				1		1	1	1					4			1		1	1	1	1	1			1	7	17
Career choice stayed the same		1	1			1		1			1	5					1		1				2		1	1		1				1		1		5	1			1							1		3	15

TABLE 10

SURVEY RAW DATA (CONTINUED)

MALE SURVEY RESPONSE

8. What was your career choice before taking a technology education class?

REPONDENT	REPLY
1A	I did not know
2A	I don't know
3A	Marine pilot
4A	Undecided
5A	Nothing
6A	My career choice is physical therapist
7A	Playing a professional sport
8A	Computer programmer
9A	(Blank)
10A	(Blank)
11A	Builder
1B	Don't know
2B	It was teen living
3B	(Blank)
4B	Cop
5B	Art
6B	Pro soccer player, veterinarian, constructor
7B	(Blank)
8B	Medicine
9B	Don't know
10B	? (Don't know)
1C	Don't Know
2C	Football or basketball player

9. What is your career choice after completing a technology education class?

RESPONDENT	REPLY
1A	A carpenter
2A	I don't have one. I want to be like my parent and not have a job.
3A	Marine pilot
4A	Undecided
5A	Nothing
6A	Physical therapist
7A	Making electronics games
8A	Computer programmer
9A	(Blank)
10A	(Blank)
11A	Builder
1B	Don't Know
2B	I'm taking the study of Spanish
3B	(Blank)
4B	Navy
5B	Tech
6B	Pro soccer player, veterinarian, constructor
7B	(Blank)
8B	Medicine
9B	Don't know
10B	Be a technician
1C	Don't Know
2C	Football or basketball player

TABLE 10

SURVEY RAW DATA (CONTINUED)

MALE SURVEY RESPONSE

8. What was your career choice before taking a technology education class?

REPONDENT	REPLY
3C	Doctor, electrician
4C	Taking teen living
5C	Computers
6C	Taking a job in auto mechanics
7C	Undecided
8C	Working in computers
9C	Going to college
10C	(Blank)
11C	Flying attack planes (Air Force)
12C	(Blank)
1D	Police Officer
2D	(Blank)
3D	I don't know
4D	Navy pilot
5D	Army or sports
6D	To learn how to make things and learn things
7D	Baseball star and over the summer carpenter
8D	Dentist
9D	To be an artist
10D	Don't know
11D	Basketball or Roller Hockey Player
12D	Architect

9. What is your career choice after completing a technology education class?

RESPONDENT	REPLY
3C	Same
4C	going back to art
5C	Going back to computers
6C	I just want to be a genius
7C	Carpenter
8C	working with computers and technology
9C	Going to college
10C	(Blank)
11C	Air Force
12C	(Blank)
1D	Police Officer
2D	(Blank)
3D	College and play baseball
4D	Navy pilot
5D	Technology related job or sports
6D	Undecided
7D	Carpenter
8D	None
9D	To work with animals
10D	Don't know
11D	Basketball or Roller Hockey Player
12D	Builder

TABLE 10

SURVEY RAW DATA (CONTINUED)

FEMALE SURVEY RESPONSES

	12A	13A	14A	15A	16A	17A	18A	19A	20A	21A	22A	TOTAL	11B	12B	13B	14B	15B	16B	17B	TOTAL	13C	14C	15C	16C	17C	18C	TOTAL	13D	14D	15D	TOTAL	TOTALS
1. Please indicate your sex.																																
A. Male																																0
B. Female	1	1	1	1	1	1	1	1	1	1	1	11	1	1	1	1	1	1	1	7	1	1	1	1	1	1	6	1	1	1	3	27
2. The person that most encouraged you to take technology education was:																																
A. your mother		1					1					2				1				1		1					1		1		1	5
B. your father	1										1	1						1		1							0				0	2
C. your brothers/sisters					1					1		0					1			0						1	1				0	1
D. your friends			1		1					1	1	1		1			1			1							0			1	1	3
E. your teachers												0								0							0				0	0
F. your guidance counselor												0	1							1							0				0	1
G. Other (fill in your reply)				1	1	1		1	1			4			1		1		1	2	1		1	1	1		4	1			1	11
Myself/No Body/I want it/I just took it				1	1	1		1	1			4					1		1	1	1		1	1	1		4	1			1	10
The television												0			1					1							0				0	1
3. Why did you take technology education? (Check the primary reason only)																																
A. I wanted a career in a technology-related field					1							0								0		1					1				0	1
B. I liked my technology education classes	1			1			1		1		1	4				1	1		1	3	1						1	1			1	9

TABLE 10

SURVEY RAW DATA (CONTINUED)

FEMALE SURVEY RESPONSES

	12A	13A	14A	15A	16A	17A	18A	19A	20A	21A	22A	TOTAL	11B	12B	13B	14B	15B	16B	17B	TOTAL	13C	14C	15C	16C	17C	18C	TOTAL	13D	14D	15D	TOTAL	TOTALS
C. I am good in technical activities			1								1	1						1		1			1				1		1		1	4
D. I wanted a job that pays well					1							0								0							0				0	0
E. It fit into my schedule												0		1						1					1		1				0	2
F. My friends are taking it		1								1	1	2			1					1							0				0	3
G. My guidance counselor																																
said I should take it												0	1							1							0				0	1
H. Other (fill in your reply)						1		1				2								0				1		1	2			1	1	5
I just took it						1						1								0							0				0	1
Cause I wanted to								1				1								0							0				0	1
Because I liked to build things out of wood																																
and I never took it before so I thought I																																
give it a try.												0								0				1			1				0	1
I liked the projects												0								0							0			1	1	1
I liked it last year												0								0						1	1				0	1
4. Are you taking a technology																																
education class because																																
A. You are genuinely interested in																																
studying technology			1	1			1					3		1	1	1	1	1		5	1	1				1	3		1		1	12
B. To fill an elective requirement		1			1	1		1	1	1	1	7							1	1			1	1	1		3	1		1	2	13
5. Do you plan on attending college?																																

TABLE 10

SURVEY RAW DATA (CONTINUED)

FEMALE SURVEY RESPONSES

	12A	13A	14A	15A	16A	17A	18A	19A	20A	21A	22A	TOTAL	11B	12B	13B	14B	15B	16B	17B	TOTAL	13C	14C	15C	16C	17C	18C	TOTAL	13D	14D	15D	TOTAL	TOTALS
A. Yes	1	1		1	1		1	1	1	1	1	9	1	1	1	1		1	1	6	1	1		1	1	1	5	1	1	1	3	23
B. No												0								0							0				0	0
C. Undecided			1			1						2					1			1			1				1				0	4
6. If you have a mother and a father, do both of your parents work?																																
A. Yes			1				1		1			3			1	1				2							0			1	1	6
B. No				1							1	2						1		1			1				1	1			1	5
C. I only have one parent	1	1			1	1		1		1		6	1	1			1		1	4	1	1		1	1	1	5		1		1	16
Does this one parent work																																
a. Yes		1			1	1		1		1		5	1	1			1		1	4	1	1		1	1	1	5		1		1	15
b. No	1											1								0							0				0	1
7. Does your parent or parents . work in a technology related job																																
A. Yes							1	1			1	3					1			1					1	1	2			1	1	7
B. No	1	1	1	1	1	1			1	1		8	1	1	1	1			1	5	1	1	1	1			4	1	1		2	19
8/9 Question Comparison																																
Put "I don't Know" or Nothing both questions						1						1					1			1							0				0	2
Left it Blank										1	1	2				1				1							0				0	

TABLE 10

SURVEY RAW DATA (CONTINUED)

FEMALE SURVEY RESPONSES

	12A	13A	14A	15A	16A	17A	18A	19A	20A	21A	22A	TOTAL	11B	12B	13B	14B	15B	16B	17B	TOTAL	13C	14C	15C	16C	17C	18C	TOTAL	13D	14D	15D	TOTAL	TOTALS
Career choice changed	1		1	1	1			1	1			6	1	1					1	3	1				1		2		1		1	12
Career choice stayed the same		1					1					2			1			1		2		1	1	1		1	4	1		1	2	10

TABLE 10

SURVEY RAW DATA (CONTINUED)

FEMALE SURVEY RESPONSE

8. What was your career choice before taking a technology education class?

REPONDENT	REPLY
12A	I have no idea
13A	I want to be a pediatrician when I get out of medical school
14A	I don't know
15A	Doing computers
16A	Architect
17A	I do not know
18A	Lawyer
19A	Undecided
20A	Teen-living
21A	(Blank)
22A	(Blank)
11B	Physical therapist
12B	cosmetology
13B	cosmetology
14B	(Blank)
15B	?
16B	Working as a maintenance mechanic or with kids
17B	Being a hair dresser or pediatrician
13C	Art class
14C	Electrical Engineer
15C	Camera Animation (Director)
16C	A masseuse
17C	A singer
18C	To be a nurse or doctor
13D	Physical therapist

9. What is your career choice after completing a technology education class?

RESPONDENT	REPLY
12A	My career choice is to do hair
13A	Pediatrician I don't care for technology too much
14A	Computer Programmer
15A	(Blank)
16A	Architect and Designer Ware
17A	I do not know
18A	Lawyer
19A	Lawyer
20A	Computers exploratory
21A	(Blank)
22A	(Blank)
11B	(Blank)
12B	Same or OB/GYN
13B	cosmetology
14B	(Blank)
15B	?
16B	Working as a maintenance mechanic or with kids.
17B	Doing hair
13C	Being a teacher
14C	Electrical Engineer
15C	Camera Animation
16C	A masseuse
17C	A track runner
18C	Still a nurse or doctor
13D	Physical therapist

TABLE 10

SURVEY RAW DATA (CONTINUED)

FEMALE SURVEY RESPONSE

REPONDENT	REPLY
14D	Nothing
15D	Lawyer

RESPONDENT	REPLY
14D	Taking it again
15D	Lawyer